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## FXPS7xxxDI4 User method to flash UF2

### Introduction

The FXPS7xxxDI4 absolute pressure sensor has been optimized for automotive use and the register map defaults set accordingly. However, there are cases when the user desires to change some default settings for their specific use case. This application note details the method to make such changes to the User Flash 2 (UF2) section using the I<sup>2</sup>C protocol.

The following sections describe the hardware setup changes required to initiate the UF2 flash, compared to the standard mission mode application circuit diagram. In addition, the programming procedure, and final functional test verify successful flashing of the UF2 region.

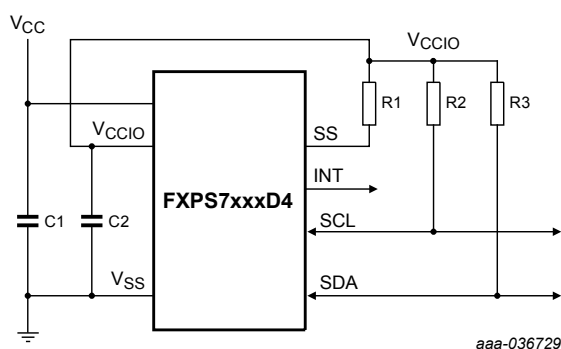
## 1 Hardware setup for UF2 programming

In order to program the UF2, the circuit diagram shown in Figure 1. Diagram for programming UF2 must be implemented where  $V_{CC}$  is disconnected from the rest of the circuitry and changed to a higher voltage as follows:

1. Disconnect  $V_{CCIO}$ , SS, SCL, and SDA from  $V_{CC}$  (so the higher voltage to  $V_{CC}$  is not applied to these pins during the procedure)
2. Add C2, a 0.1  $\mu$ F/10 V decoupling capacitor (same as C1 in the application diagram)
3. Connect  $V_{CCIO}$  to SS, SCL, and SDA pullup resistors (R1, R2, and R3)
4. Apply 10 V to  $V_{CC}$

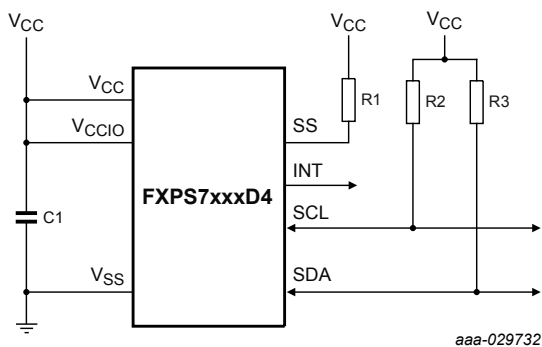
Figure 1. Diagram for programming UF2 presents a suggested application diagram for programming UF2.

Figure 1. Diagram for programming UF2



Once the UF2 write procedure as described in Section 2: UF2 programming procedure is complete, power cycle the part, connect as in the standard application diagram as shown in Figure 2. I<sup>2</sup>C application diagram of FXPS7250D4, and verify the device works as intended.

Figure 2. I<sup>2</sup>C application diagram of FXPS7250D4



## 2 UF2 programming procedure

The procedure for writing to the user one time programming (OTP) array UF2 region is detailed in the following steps:

1. Write the UF2 register values (in this application note, we are changing the I2C address):
  - Write **NEW I<sup>2</sup>C** register address to 0x3F.
2. Execute a write to UF2 region:
  - Write 0x8E to register 0x11 **with NEW I<sup>2</sup>C register address from step 1 above**. This write starts the flash process.
  - Once the write is completed, the register values are written as OTP and the region is locked from future writes. Bit 7 of register 0x11 remains set thereafter.
3. Read register 0x5F bit 7 for status of UF2 write complete:
  - Verify bit 7 is set, otherwise the write to UF2 region may have failed.
  - Bit 7 should be set within 10 ms.
4. As specified in the hardware setup:
  - Once the programming is complete, reconnect the circuitry for the sensor in its standard application configuration. See [Figure 2. I<sup>2</sup>C application diagram of FXPS7250D4](#).
  - Check if the device performs as expected.

## Revision history

| Date        | Version | Changes                                         |
|-------------|---------|-------------------------------------------------|
| 15-Oct-2026 | 1       | Initial release from ST, rebranded NXP document |

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